

Learn between learning styles and teaching practices: Case of qualifying students

Abderrazzak Mazouak

Regional Center for Education and Training, Taza, Morocco

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Keywords— *Learning performance,
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differential psychology,
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Abstract— *In a classroom, individual differences manifest themselves in learners at two levels: a rather quantitative level, that of learning performance, and a rather qualitative level, that of the form that learners give to their learning.*

The notion of learning styles is therefore based on the idea that different learners have different ways of learning. That is, what can explain their success or failure is not only a question of level of efficiency, but also the different ways in which they perceive, store, process and render information, the way which they build their knowledge base. The discipline underlying thinking about learning styles is differential psychology. We will refer to it often.

First, we will briefly review the work that was carried out with a view to dealing with learning difficulties by taking into account differences in efficiency. We will then present two scientific concepts that shed light on the notion of learning styles: cognitive styles and vicarious processes. Then we will present statistics specific to the work of trainee teachers at TAZA CRMEF on the dominance of learning styles in the qualifying cycle. We will end by justifying with a few examples the pedagogical adaptations recommended to take into account the styles of learners in pedagogical practice.

I. INTRODUCTION

Learning difficulties have long been conceived solely as the result of deficits in the intellectual efficiency of learners. Contemporary and part of the early days of psychology as an autonomous science, the work of Binet (Binet & Simon, 1905) was intended to identify children who, because of their cognitive deficits, were in need of special education. Individual differences were assessed according to a single dimension: mental age. However, we will do justice to Binet by noting that from this period (Binet, 1909/1973), he had the intuition of qualitative differences when he described, for example, the different modes of operation of his two daughters, whom he probably did not suspect any debility.

Learning styles are more difficult to identify than cognitive styles, which enjoy the status of scientific constructs validated by laboratory measurements. They also suffer from the mediocre scientific quality of many models among which practicing pedagogues sometimes choose, unfortunately, according to superficial criteria, or because the model supports their preconceptions.

However, their practical and theoretical interest outweighs the flaws, which we have pointed out and which we consider provisional.

On a practical level, they allow the learner to take his personal characteristics into account. This consideration can be achieved without excessive “psychologization”. For example, learning styles, because they are modifiable and vicarious, avoid confining the subject's difficulties to

explanations formulated in terms of aptitudes or personality traits relatively independent of the situations. They encourage us to keep in mind that learning behaviors result from an interaction between components of the training situation and dynamic characteristics of the person.

Today, the teaching mission requires teaching practices that watch over the development of the learner's cognitive, metacognitive and socio-affective strategies in order to develop in the pupil a citizen a critical look towards himself and towards the students. other.

II. THEORETICAL FRAME

Learning strategies and styles are two distinct concepts (Wenden 1985; Oxford 1990a). Learning strategies are specific techniques or methods that learners use in learning situations to solve problems, tackle a task, prepare for an exam, or participate in ongoing activities. These strategies can be learned, and learners can consciously choose to apply a specific strategy in a given situation. In turn, learning styles are an integral part of an individual's personality and have a physiological basis. Learning strategies are implemented when the usual learning styles are ineffective in solving a problem (Riding & Rayner 1998: 11).

A- Learning strategies

Initially, research on learning strategies was initiated in order to establish a list of strategies employed by successful learners. These strategies are then taught to learners who are struggling (Naiman et al. 1978). Learning strategies have been the subject of much research in the field of language learning (Rubin 1975; Wenden 1985; Oxford 1990a and 1990b; O'Malley & Chamot 1990; Purpura 1999; Wharton 2000). Most of this research shows that the most successful learners are those who use the strategies most appropriate to the materials, tasks, learning objectives and personal needs. Using appropriate strategies can also foster learner autonomy, as Rebecca Oxford and Martha Nyikos claim "use of appropriate learning strategies empower learners to take responsibility for their learning through improved autonomy and independence (Oxford & Nyikos 1989: 291)"

Rebecca Oxford (1990) proposes a taxonomy "Table 1" of strategies. His model is widely used in research on language acquisition. Two categories of direct and indirect strategies, divided into sub-categories are proposed:

Table 1. Taxonomy of learning strategies

Direct strategies	Memorization strategies	Create mental connections Apply images to sounds Revise Act to learn
	Cognitive strategies	Practice the language Receive and send messages Analyze and reason Create structures
	Compensation strategies	Compensation strategies
Indirect strategies	Metacognitive strategies	Focus learning actions Plan and organize your learning Self-assessment / carry out a check
	Affective strategies	Control your anxiety anxiety Encourage each other Take your emotional pulse Emotion
	Social strategies	To ask questions Cooperate Create an empathetic relationship

B- Learning styles

With regard to learning styles, much research, for example, the Experiential Learning Theory (Kolb 1976; Joy & Kolb 2009), the inventory of learning styles learning (Learning Style Inventory) (Dunn, Griggs & Price 1993), or the theory of mental autonomy (Theory of Mental Self-Government) (Sternberg 1997; Zhang & Sternberg 2000), were carried out.

For our study, we retained the learning style inventory theory of Rita Dunn, Shirley Griggs and Gary Price (1993) because it associates learning styles with physiological and cognitive preferences and constitutes the closest model of our representation on learning styles.

The authors cite five factors related to learning styles (1993: 238): the classroom environment (sound or silence; soft or strong lighting; hot or cold temperature; arrangement of furniture) emotion (motivation; perseverance; responsibility; structure); social preferences (individual work, in pairs, with peers, in groups with an authoritative or accommodating adult; the need for variation or routine); physiological preferences (auditory; visual; kinaesthetic; the need to eat / drink or not when learning; the energy level during the day; the need for mobility or not); the processing trend (global or analytical; hemispherical preference: the right hemisphere of the brain is identified as intuitive, while the left hemisphere is logical; impulsive or reflective).

C- Sense of personal efficiency

The feeling of personal efficacy or self-efficacy is a psychological theory developed by Bandura (1977, 1997). This notion is defined as "beliefs in one's ability to organize and execute actions necessary to produce expected results" 3 (Bandura 1997: 3). Madeline Ehrman (1996: 137) interprets this notion in the field of education, particularly language learning, as "the extent to which the learner thinks he is capable of facing the learning challenge".

According to Bandura (1997), the construction of SEP has its source in four factors: active experiences of mastery (mastery experiences), social learning (vicarious experiences), persuasion by others (social persuasion) and physiological and emotional (physiological arousal).

- Active mastery experiences mean that successes serve as an indicator of capacity and therefore build a strong belief in self-efficacy, while failures undermine it.

- Social learning is the assessment of one's own abilities against those of others. The individual draws conclusions from observing the actions of other people. These are the subjects whose characteristics (age, sex, etc.) are the closest who are most likely to be sources of information.

Persuasion by others means trusting others in their abilities. It is easier for someone to maintain a sense of effectiveness, especially when faced with difficulties, if other significant people express their confidence in their abilities.

- Physiological and emotional state means that in assessing their abilities, a person relies in part on the information conveyed by their physiological and emotional state, especially when their activity concerns health, physical activities and stress management (Lecomte 2004).

Research by Jay Jackson (2002) and Johan Ferla, Martin Valcke and GilberteSchuyten (2008) shows that MS has a positive correlation with academic achievement. The

important effect of this feeling in the school situation is thought to be due to its motivational aspect which affects the actions of learners. In view of the results of the cited research, we can hypothesize that learning styles and strategies appropriate or inadequate to the learning situation can increase or decrease the SEP which, in turn, provides the learner with information. so that he adjusts (or not, if he does not wish) his subsequent actions by aiming for other successes. Our study aimed to test this working hypothesis.

D- Teaching style

By drawing inspiration from the work of Blake and Mouton, in terms of management, we can identify 4 styles of teaching representative of observable teaching practices, from a two-dimensional model (attitude towards the subject, attitude towards learners).

- **Transmissive style:** the teacher communicates as much information as possible in the allotted time. His presentation directly transposes a written text without adapting it to circumstances and to the public

- **Incentive style:** the teacher is constantly concerned with involving individuals, he asks for ad hoc responses, but without effective use ("riddle" questions.

- **Associative style:** the teacher only grants relative trust to the learners. He intends to make them work, but does not expect much from this collaboration, he does not promise effective help, he "corrects" and "corrects"

- **permissive style:** the teacher remains passive, even lax. He is content to fill the time allotted to him without real consideration for the learners and for the objectives

III. METHODOLOGY

In our methodological framework we have formed a heterogeneous group of students, of 134 students who belong to the three branches of secondary education (first year of the baccalaureate), namely:

Table.2: Research samples

Scientific Section	Literary Section	Economic Section
43	44	47
33%	33%	34%

Table.4: Learning strategy

	Scientific Section	Literary	Scientific Section
Memorization strategies	21%	29%	16%
Cognitive strategies	26%	13%	28%
Compensation strategies	23%	11%	31%
Metacognitive strategies	14%	12%	4%
Affective strategies	6%	14%	9%
Social strategies	10%	21%	12%

We founded our theory through three different questionnaires:

In the first ; We used the Learning Styles Index test as a support which was published by Richard Felder (educator) and Barbara Soloman (psychologist) in 1991.

The test is available online, it contains 44 to reflect the learning styles of the students

Secondly, we distributed a questionnaire on learning strategies

And third, we asked our sample about their preference in teaching style.

IV. RESULTS

The results of our experimentation showed:

A- Regarding the learning style

Table.3: Student learning styles

	Scientific Section	Literary	Scientific Section
Visual style	52%	34%	41%
Hearing style	12%	54%	42%
Kinesthetic style	36%	12%	17%

From the results of table 3 we detect that the dominance of visual style for scientists and this due to the nature of the content which contains diagrams and figures, but with an important value

for the kinesthetic style also because of the concrete and palpable experiments practiced by this branch.

For the literary branch the dominant and auditory style which is explained by the nature of the narrative and the historical and philosophical aspect of the branch against the economist who are heterogeneous even for their learning styles

B- In relation to the learning strategy

We have classified the learning strategies according to the preferences of the students in relation to each branch.

The results mentioned in table 4 show that for each category of students, a learning strategy dominates which reflects the construction of knowledge on the one hand and the nature of the content addressed by the teachers on the other hand of which we note that the cognition is dominant among scientists against memorization for literary people and comprehension for economists.

In the context of our research, therefore, students seem to be much more interested in unusual and new activities than in activities that are supposed to be adapted to their learning style or old.

Conducted with our sample of 134 students who responded to a Table 5 questionnaire on the factors influencing their motivation, reveals the importance of using a variety of teaching strategies to capture students' attention and arouse their curiosity. The results of this research show that in addition to the personality of the teacher, the use of a variety of instructional strategies positively influences the motivation to learn of students.

Table 5: Classic or diversified strategy

	Teaching strategy classic	Diversified teaching strategy
For	3%	97%
Against	97%	3%

Conversely to learning strategies, students' appreciation of teaching styles was differently marked. table 6

Table 6: Teaching styles

Transmissive style	Incentive style	Associative style	permissive style
0%	31%	47%	12%

The preferred teaching styles are then, the incentive and the social; the non-preferred styles are the transmissive and the permissive despite the skills targeted by the latter.

Indeed, according to Sauv , Debeurme, Wright, Fournier and Fontaine (2007), diversified educational activities offer students the possibility of making choices and breaking up the routine while promoting their

motivation to learn, other than the use of strategies. diversified teaching methods to respond to the diversification of learning styles and from the same perspective offer motivating content for students and have a positive effect on their academic success and perseverance.

V. CONCLUSION

In this article, we have focused on a set of learning styles and learning strategies based on several studies from cognitive psychology or social psychology. These styles and strategies were linked to the students' perception and their representations of the learning content in order to identify the favorable factors. From the results obtained, we have shown that there are certain relationships between teaching styles and strategies and the feeling of success or failure. In other words, it is from a clear and well-founded definition of the characteristics.

of learners that we can propose a teaching approach likely to strengthen motivation and a factor in academic success.

In the same perspective, the results of the experiment confirmed that the search for a teaching strategy is based on the connection of four parameters directly linked to the prerequisites, to the cognition and to the psychology of the pupils, namely: The nature of the content offered, the degree of motivation and attraction of the students, the level of reflection and analysis of the students and the learning style recommended by each of the students.

However, the identification of learning styles should allow an optimal use of skills, more effective communication and the constitution of better performing teams at work, as well as a differentiation of the teaching strategy to respond to the variety. learning strategies to advance and perform all high.

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